

REMARKS

The Applicant respectfully requests reconsideration of the objections and rejections set forth in the Final Office Action dated August 13, 2003, and the Advisory Action dated December 12, 2003.

The Rejection under 35 U.S.C §112:

Claims 1-3, 5, 6, 66 and 78 stand rejected over 35 USC §112, second paragraph, as being indefinite for the reasons set forth in the Office Action. The Applicants have amended these claims in the manner suggested by the Examiner. Specifically, the communication structure is now positively claimed. Accordingly, withdrawal of the §112 rejection is respectfully requested. Regarding application of the reference numeral 22 and 21 for both the dispensing actuator and dispensing source, and the aspiration actuator and aspiration source, respectively, the Applicants submit that the amendment to the specification in the previous Office Action, dated May 19, 2003, clearly indicates that the aspiration actuator is a form of the aspiration source. Similarly, it is clearly indicated that the dispensing actuator is a form of the dispensing source. However, if the Examiner still believes this to be an issue, the Applicants will cancel one of the terms for consistency.

The Rejection under 35 U.S.C §102(b):

The Examiner has rejected claims 1-3, 59 and 63-65 under 35 USC §102(b) as being anticipated by new reference Kenny, U.S. Patent No. 4,461,328. In view of the above-indicated amendments and the forgoing remarks, the Applicants respectfully disagree.

Briefly, as previously indicated, claim 1 recites a hybrid valve apparatus for use with an aspiration actuator and a dispensing actuator to transfer fluid from a

reservoir to a test site on a substrate surface. The valve apparatus includes a valve assembly movable between an aspiration condition and a dispensing condition, and a single-unit fluid distribution manifold device defining a separate fluid aspiration conduit and a fluid dispensing conduit. The fluid aspiration conduit includes a first aspiration port for fluid communication with the aspiration actuator, and a second aspiration port in selective fluid communication with the valve assembly. This enables selective aspiration of a liquid sample slug from the reservoir through a dispensing orifice of a fluid communication structure. This structure defines a discrete sample path extending from the dispensing orifice and through at least a portion of the manifold device for fluid communication with the valve assembly, when the valve assembly is in the aspiration condition. The fluid dispensing conduit includes a first dispensing port in fluid communication with the dispensing actuator, and a second dispensing port in selective fluid communication with the valve assembly to selectively dispense at least one droplet of the liquid sample slug from the dispensing orifice of the communication structure when the valve assembly is in the dispensing condition. In accordance with the present invention, when the valve assembly is oriented in the aspiration condition, the sample path is out of fluid communication with the dispensing actuator and, while in the dispensing condition, the sample path is out of fluid communication with the aspiration actuator.

Accordingly, the hybrid valve apparatus provides a single-unit fluid distribution manifold and single valve assembly ~~the~~ that enables aspiration into and dispensing from a dispensing orifice of a discrete path, a primary passage portion of which extends at least partially through the manifold. In the present invention, both the aspiration conduit and the dispensing conduit are contained in a relatively rigid, single-unit or one-piece manifold structure (28) applied for fluid aspiration and distribution of the sample slugs. This arrangement is beneficial in that there is not

only a substantial reduction of components, but there is a reduction in the number of interconnection interfaces and flexible tubing. For precision fluid dispensing, energy can be dissipated through turbulent interfaces and through flexible tubing, causing inaccuracies in such fluid dispensing. By providing a rigid, single unit the aspiration and dispensing energy of the actuators can be concentrated on the aspiration and dispensing procedures.

Briefly, while the single-unit manifold (28) may be originally constructed from multiple plate members (e.g., 63-66, Figs. 4-6), for construction purposes, they will be rigidly mounted together to form the single-unit manifold 28.

Kenny, in contrast, discloses a multi-component pipetting device aspirating into a conical pipetting tube 4 of a tray 3. Referring to the embodiment of FIGURES 5 and 6, a pipette device 2 is removably mounted to tray 3 that provides an interconnection 36 mounted to one end of a flexible hose 38. The other end of the flexible hose is coupled to valve 52, which in turn is connected through flexible lines 54 and 56 to a pressure source and a vacuum source, respectively. In essence, Kenny does not have an actual manifold device as the present invention suggests. The pipetting device of Kenny requires the conical pipetting tube 4 of a tray 3, the pipette device 2, the interconnection 36, the flexible hose 38, and the flexible tubes 54, 56 to provide the functionality of the single-unit manifold device of the present invention. More importantly, application of such an abundance of components, interconnects and flexible tubings reduce the precision aspiration and dispensing of the sample slug.

In view of the foregoing arguments and amendment, withdrawal of the §102(b) rejection is respectfully requested.

The Rejection under 35 U.S.C §103(b):

The Examiner has rejected claims 5-10 and 62-65 under 35 USC §103(a) as being unpatentable over Kenny, and further in view of Naono. In view of the above-indicated amendments and the forgoing remarks, the Applicants respectfully disagree.

Naono also discloses a complex, multiple component device applying multiple valves to perform the functionality of the present invention. The device of Naono also does not disclose a single unit manifold device housing the analogous dispensing conduit and aspiration conduit. In fact, the analogous aspiration conduit 35a of Kenny actually passes through the rotating body 32 of the rotor valve.

In view of the foregoing arguments and amendments, withdrawal of the §103(a) rejection is respectfully requested.

Conclusion

In light of the above amendments and remarks, the Applicants respectfully request that the Examiner reconsider this application with a view towards allowance. It is believed that all claims now pending and all Previously Presented claims fully and patently define the subject invention over the cited art of record and are in condition for allowance.

If the Examiner has any questions concerning this case, the Examiner is respectfully requested to contact Michael L. Louie at (510) 843-6200.

The Commissioner is hereby authorized to charge any additional fees, including any extension fees, which may be required or credit any overpayment directly to the account of the undersigned, No. 50-0388 (Order No. INVDP001).

Respectfully submitted,

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